BAS POINTS LIST - ZONE CONTROLS (EXTERNAL TO PEM CONTROLS)

BAS POINT DESCRIPTION	HARDWARE POINTS				SOFTWARE POINTS					NETWORK COMMUNICATION	UNITS	GRAPHIC	REMARKS	NET POINT QTY
	AI	AO	DI	DO	AV	DV	SCHED	TREND	ALARM	BACNET				
OUTDOOR AIR TEMPERATURE	1							1			°F	Y	-	1
OUTDOOR AIR ENTHALPY (HUMIDITY)	1							1			%RH	Y	-	1
OUTDOOR REFERENCE PRESSURE	1							1			in w.g.	Y	-	1
ZONE PRESSURE MONITOR PANELS - QTY 9										9	-	-	INTEGRATE MONITORING PANELS/SUMMARY PANEL	9
ZONE DIFFERENTIAL PRESSURE AT ROOM PRESSURE BOUNDARY	20				20			20	20		in w.g.	Y	SEE ALSO SEQUENCES AND DWG. M7.00	20
PRESSURE MONITOR ALARM OVERRIDE KEY-SWITCH ACTIVATED	8								8		in w.g.	Y	POS (OR's), NEG (ISOL RM's) ALARM DISABLED	8
ZONE OCCUPANCY SENSOR	7							7			°F	Y	MULTI-TECHNOLOGY - COORD MOUNTING HIGH IN ROOM	7
ZONE TEMPERATURE	57							57			°F	Y	-	57
ZONE TEMPERATURE SETPOINT ADJUST	57										°F	Y	-	57
ZONE TEMPERATURE OVERRIDE			57					57			°F	Y	-	57
ZONE HEATING SETPOINT								57			°F	Y	-	0
ZONE COOLING SETPOINT								57			°F	Y	-	0
ZONE AIRFLOW SETPOINT		106			106			106			CFM	Y	OCCUPIED, UNOCCUPIED, SMOKE CONTROL	106
AIRFLOW CONTROL VALVE (SAV, EAV) AIRFLOW - ISOLATION ROOMS	4				4			4		4	CFM	Y	-	4
AIRFLOW CONTROL VALVE (SAV, EAV) DAMPER - ISOLATION ROOMS		4				4		4		4	%OPEN	Y	% OPEN FEEDBACK	4
AIR TERMINAL UNIT (TUS,TUR, TUE) AIRFLOW	102							102			CFM	Y	-	102
AIR TERMINAL UNIT (TUS, TUR, TUE) DAMPER		102						102			%OPEN	Y	% OPEN FEEDBACK	102
HEATING HOT WATER (REHEAT, UH, RAD) COIL CONTROL VALVE		48						48			%OPEN	Y	% OPEN FEEDBACK	48
REHEAT COIL LEAVING AIR TEMP	46							46			°F	Y	-	46
REHEAT COIL LEAVING WATER TEMP	46							46			°F	Y	-	46
HEATING MODE (WARM-UP)							Y	3			-	-	SEE SEQUENCES-AC-8, AC-9, AC-10	0
SCHEDULE (OCCUPIED-UNOCCUPIED)							Y	3			-	Y	SEE SEQUENCES-AC-8, AC-9, AC-10	0
UNOCCUPIED OVERRIDE LOCAL INDEXING/PUSH BUTTON			3								-	Y	SEE SEQUENCES-AC-8, AC-9, AC-10	3
HIGH ZONE TEMP									57		°F	-	-	0
LOW ZONE TEMP									57		°F	-	-	0
HIGH REHEAT COIL DISCHARGE AIR TEMP									46		°F	-	-	0
LOW REHEAT COIL DISCHARGE AIR TEMP									46		°F	-	-	0
HIGH BOUNDARY PRESSURE DIFFERENTIAL									20		in w.g.	-	-	0
LOW BOUNDARY PRESSURE DIFFERENTIAL									20		in w.g.	-	-	0
DUCT-MOUNTED SMOKE DETECTOR ACTIVATED	10								10		-	Y	SMOKE DETECTED	10
DUCT-MOUNTED SMOKE DAMPER POSITION	10							10			-	Y	END SWITCH (OPEN/CLOSED)	10
TEMP GAS STRG RM - (E)1S-EF-11 - START/STOP		1									-	Y	TEMP FAN-REMOVE/TURN OVER TO VAMC END OF PH6	1
TEMP GAS STRG RM - (E)1S-EF-11 - CURRENT STATUS	1								1		-	Y	TEMP FAN-REMOVE/TURN OVER TO VAMC END OF PH6	1
SURG LOCKERS /LOUNGE - 1S-EF-19 VFD										1	-	-	INTEGRATE VFD	1
1S-EF-19 - START/STOP (Run)				1							-	Y	-	1
1S-EF-19 - AC-09 SUPPLY FAN INTERLOCK		1									-	-	-	1
1S-EF-19 - SPEED CONTROL INPUT (SPEED SP)		1									-	-	-	1
1S-EF-19 - CURRENT STATUS (FAN FAULT)	1								1		-	Y	-	1
1S-EF-19 - SPEED INDICATION	1										-	Y	-	1
1S-EF-19 - VFD FAULT			1						1		-	Y	-	1
NEW GAS STRG RM - 1S-EF-20 - START/STOP		1									-	Y	-	1
1S-EF-20 - CURRENT STATUS (FAN FAULT)	1								1		-	Y	-	1
(E)1S-EF-16 - CURRENT STATUS (FAN FAULT)	1								1		-	Y	-	1

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BAS POINTS LIST - HEATING HOT WATER GENERATION/DISTRIBUTION SYSTEM

BAS POINT DESCRIPTION	HARDWARE POINTS				SOFTWARE POINTS					NETWORK COMMUNICATION	UNITS	GRAPHIC	REMARKS	NET POINT QTY
	AI	AO	DI	DO	AV	DV	SCHED	TREND	ALARM	BACNET				
HEATING HOT WATER GEN/PUMPING SKID WITHIN PEM - 1S-HTPS-1	COORDINATE ALL REQUIRED HARD-WIRED AND FIELD/SPACE DEVICE POINTS WITH PEM/AHU MFGR													
REHEAT PUMPS 1S-P-16A, 16B - VFD INTEGRATION										2	-	-	INTEGRATE VFD's - NETWORK CONNECTION	2
START/STOP (RUN)				2						-	-	Y	-	2
SPEED CNTRL INPUT (SPEED SP)		2								-	-	-	-	2
HEATING WATER SUPPLY FLOW INDICATION / BTU METER	1							1		-	GPM / BTUH	Y	FLOW AND ENERGY	1
CURRENT STATUS	2		2						2	-	-	-	-	4
SPEED INDICATION	2									-	-	Y	-	2
VFD FAULT			2						2	-	-	-	-	2
HEATING HOT WATER BYPASS CONTROL VALVE	1	1						1			%OPEN	Y	% OPEN FEEDBACK	2
HEATING HOT WATER SUPPLY TEMPERATURE	1							1	1		-	Y	-	1
HEATING HOT WATER SUPPLY TEMP RESET		1					Y	1			-	Y	-	1
HEATING HOT WATER RETURN TEMPERATURE	2							2			-	Y	UPSTREAM AND DOWNSTREAM OF BYPASS	2
HEATING HOT WATER SYSTEM DIFFERENTIAL PRESSURE-REMOTE COIL	1							1			-	Y	COORD LOCATION WITH TAB	1
HEATING HOT WATER PUMP DIFFERENTIAL PRESSURE-SYSTEM HEAD	1							1			-	Y	TOTAL SYSTEM HEAD	1
STEAM CONTROL VALVES - 1/3, 2/3	2	2						2			%OPEN	Y	% OPEN FEEDBACK	4

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BAS POINTS LIST - PENTHOUSE EQUIPMENT MODULE

BAS POINT DESCRIPTION	HARDWARE POINTS				SOFTWARE POINTS					NETWORK COMMUNICATION	UNITS	GRAPHIC	REMARKS	NET POINT QTY
	AI	AO	DI	DO	AV	DV	SCHED	TREND	ALARM	BACNET				
CUSTOM AHU WITHIN PEM - NETWORKED AHU CONTROL PANEL	COORDINATE ALL REQUIRED HARD-WIRED AND FIELD/SPACE DEVICE POINTS WITH PEM/AHU MFGR									INTEGRATION	MULTI	Y	SEE SEQUENCES - INTEGRATE PEM/AHU/ZONE/HTPS POINTS TO SITE BAS	
SUPPLY FANS 1S-SF-16A, 16B - VFD INTEGRATION										2	-	-	INTEGRATE VFD's - NETWORK CONNECTION	2
AHU/SF START/STOP (RUN)				2						-	-	Y	-	2
Return/Relief/Exhaust Fans 1S-RF-16A, 16B Interlock		2							2	-	-	Y	-	2
Speed Cntrl Input (Speed SP)		2								-	-	-	-	2
Total Supply Airflow indication (PIEZOMETER)	2							2		-	CFM	Y	SUM OF OPERATING FANS	2
Supply Pressure	2							2		-	in w.g.	Y	-	2
Current Status	2								2	-	-	-	-	2
Speed Indication	2									-	-	Y	-	2
VFD Fault			2						2	-	-	-	-	2
Vibration Monitor			2							-	-	Y	-	2
RETURN FANS 1S-RF-16A, 16B - VFD INTEGRATION										2	-	-	INTEGRATE VFD's - NETWORK CONNECTION	2
START/STOP (RUN)				2						-	-	Y	-	2
SUPPLY FANS 1S-SF-16A, 16B Interlock		2							2	-	-	Y	-	2
Speed Cntrl Input (Speed SP)		2								-	-	-	-	2
Total Return/Relief Airflow indication (PIEZOMETER)	2							2		-	CFM	Y	SUM OF OPERATING FANS	2
Return Pressure	2							2		-	in w.g.	Y	-	2
Current Status	2		2						2	-	-	-	-	4
Speed Indication	2									-	-	Y	-	2
VFD Fault			2						2	-	-	-	-	2
Vibration Monitor			2							-	-	Y	-	2
Return Fan Inlet Isolation Damper w/End Switch	2	2								-	-	Y	AUTOMATIC ISOLATION DAMPER AT INLET, MANUAL DAMPER AT DISCH	4
Modulating Return/Mixing Damper w/End Switch	1	1								-	-	Y	MIXING/RETURN INTO AHU CFM CALC: TOTAL SUPPLY MINUS TOTAL OA	2
Modulating Minimum Outside Air Damper w/End Switch	1	1								-	-	Y	-	2
Minimum Outside Air Flow Measuring Device	1							1		-	CFM	Y	-	1
Modulating Maximum Outside Air Damper w/End Switch	1	1								-	-	Y	-	2
Maximum Outside Air Flow Measuring Device	1							1		-	CFM	Y	-	1
Modulating Relief/Exhaust Air Damper w/End Switch	1	1								-	-	Y	RELIEF AIR FROM AHU CFM CALC: TOTAL RETURN MINUS MIXING/RA AIR	2
Supply Air Smoke Damper w/End Switch	1	1								-	-	Y	-	2
Supply Air Smoke Detector	1								1	-	-	Y	-	1
Return Air Smoke Damper w/End Switch	1	1								-	-	Y	-	2
Return Air Smoke Detector - AT INLET PLENUM TO RF's	1								1	-	-	Y	-	1
RETURN AIR TEMPERATURE - AT INLET PLENUM TO RF's	1							1		-	°F	Y	-	1
RETURN AIR HUMIDITY - AT INLET PLENUM TO RF's	1							1		-	%RH	Y	MONITOR RA ENTHALPY	1
RETURN AIR LOW PRESSURE SWITCH - TOO NEGATIVE (INLETS OF RF's)			2						2	-	in w.g.	-	SAFETY SHUT-DOWN OF RETURN FAN(S)	2
RETURN AIR HIGH PRESSURE SWITCH - TOO POSITIVE (DISCH OF RF's)			2						2	-	in w.g.	-	SAFETY SHUT-DOWN OF RETURN FAN(S)	2
SUPPLY AIR HIGH PRESSURE SWITCH - TOO POSITIVE (DISCH OF SF's)			1						1	-	in w.g.	-	SAFETY SHUT-DOWN OF SUPPLY FAN(S)	1
SUPPLY AIR LOW PRESSURE SWITCH - TOO NEGATIVE (INLETS OF SF's)			1						1	-	in w.g.	-	SAFETY SHUT-DOWN OF SUPPLY FAN(S)	1
OUTDOOR AIR INTAKE TEMPERATURE - AT OA INLET PLENUM	1							1		-	°F	Y	-	1
OUTDOOR AIR INTAKE HUMIDITY - AT OA INLET PLENUM	1							1		-	%RH	Y	MONITOR OA ENTHALPY	1
PRE-FILTER 1 (MERV 8) DIFFERENTIAL PRESSURE	1								1	-	in w.g.	Y	-	1
PRE-FILTER 2 (MERV 14) DIFFERENTIAL PRESSURE	1								1	-	in w.g.	Y	-	1
MIXED AIR TEMPERATURE - UPSTREAM OF VIFB	1							1		-	°F	Y	-	1
MIXED AIR INTAKE HUMIDITY - UPSTREAM OF VIFB	1							1		-	%RH	Y	MONITOR MIXED AIR ENTHALPY	1
VIFB Steam Preheat Blocking Valve Control	1	1								-	-	Y	-	2
VIFB Steam Preheat Valve Control/Status	1	1								-	-	Y	-	2
VIFB Face & Bypass Damper w/End Switch	1	1								-	-	Y	-	2
MIXED AIR TEMPERATURE - DOWNSTREAM OF VIFB	1							1		-	°F	Y	-	1
Freeze Stat			1					1	1	-	-	Y	-	1
Steam Humidifier Blocking Valve Control	1	1								-	-	Y	-	2
Steam Humidifier Control Valve/Status	1	1								-	-	Y	-	2
Steam Humidifier Proof of Airflow			1							-	-	Y	-	1
MIXED AIR TEMPERATURE DOWNSTREAM OF HUMIDIFIER	1							1		-	°F	Y	-	1
Cooling Coil Valve Control/Status	1	1								-	-	Y	-	2
Cooling Coil Chilled Water Delta T	1							1		-	°F	Y	-	1
Cooling Coil Leaving Air Temp	1							1		-	°F	Y	-	1
BIO-FILTER/UV SYSTEM (GAPC) Controller Integration										1	-	Y	INTEGRATE SPECIALTY FILTER CONTROL PANEL	1
BIO-FILTER/UV SYSTEM START/STOP				1						-	-	Y	-	1
BIO-FILTER/UV SYSTEM Current Status-UV Fault	1							1	1	-	-	Y	MONITOR CURRENT/AMP DRAW TO PROMPT BULB CHANGEOUT	1
BIO-FILTER/UV SYSTEM CUT-OFF SWITCH	1							1	1	-	-	Y	DISABLE UV IF AHU AIR TUNNEL ACCESS DOOR NEAR UV OPENED	1
FINAL FILTER 2 (HEPA) DIFFERENTIAL PRESSURE	1								1	-	in w.g.	Y	-	1
Supply Discharge Air Temperature	1							1	1	-	°F	Y	-	1
Supply Discharge Air HUMIDITY	1							1	1	-	%RH	Y	MONITOR SUPPLY AIR ENTHALPY	1
Supply Discharge Air Dew Point Temperature	1							1	1	-	°F	Y	MONITOR SUPPLY AIR DEWPOINT	1
SUPPLY AIR HIGH HUMIDITY - HUMIDIFIER CUT-OFF SWITCH	1							1	1	-	%RH	-	COORDINATE MSH LOCATION 10'-0" MIN FROM HUMIDIFIER	1
SUPPLY AIR DUCT STATIC PRESSURE SENSOR	1							1		-	in w.g.		COORDINATE LOCATION WITHIN DUCT SYSTEM WITH TAB	1
RETURN AIR DUCT STATIC PRESSURE SENSOR	1							1		-	in w.g.		COORDINATE LOCATION WITHIN DUCT SYSTEM WITH TAB	1
PEM SURGERY/OPERATING ROOM/STERILE CORE SUITE ZONE CONTROLS	COORDINATE ALL REQUIRED HARD-WIRED AND FIELD/SPACE DEVICE POINTS WITH PEM/AHU MFGR													
ZONE TEMPERATURE	11							11		-	°F	Y	INCLUDES PEM ACCESS AREA SPACE TEMPS.	11
ZONE TEMPERATURE SETPOINT ADJUST	11									-	°F	Y	-	11
ZONE TEMPERATURE OVERRIDE			11					11		-	°F	Y	-	11
ZONE HUMIDITY (OPERATING ROOMS)	6							6		-	%RH	Y	MON/ALRM SPACE RH% AS ADDED FEEDBACK FOR AHU HUMID CONTROL	6
ZONE HEATING SETPOINT								11		-	°F	Y	-	0
ZONE COOLING SETPOINT								11		-	°F	Y	-	0
ZONE AIRFLOW SETPOINT		20			20			20		-	CFM	Y	OCCUPIED, UNOCCUPIED, SMOKE PURGE	20
AIRFLOW CONTROL VALVE (SAV,RAV) AIRFLOW	20							20		-	CFM	Y	-	20
AIRFLOW CONTROL VALVE (SAV,RAV) DAMPER		20						20		-	%OPEN	Y	% OPEN FEEDBACK	20
HEATING HOT WATER (REHEAT, UH, RAD) COIL CONTROL VALVE		15						15		-	%OPEN	Y	% OPEN FEEDBACK	15
REHEAT COIL LEAVING AIR TEMP	11							11		-	°F	Y	-	11
REHEAT COIL LEAVING WATER TEMP	11							11		-	°F	Y	-	11
SMOKE PURGE MODE (EMERGENCY SMOKE PURGE MODE)							Y	1		-	-	-	SEE SEQUENCES	0
Operating Room High Return Air Inlet Isolation Damper w/End Switch	13	13								-	-	Y	TWO-POSITION DAMPERS - OPEN ONLY DURING SMOKE PURGE	26
HEATING MODE (WARM-UP)							Y	1		-	-	-	SEE SEQUENCES	0
SCHEDULE (OCCUPIED-UNOCCUPIED)							Y	1		-	-	Y	SEE SEQUENCES	0
UNOCCUPIED OVERRIDE LOCAL INDEXING/PUSH BUTTON			1							-	-	Y	SEE SEQUENCES	1
HIGH ZONE TEMP									11	-	°F	-	-	0
LOW ZONE TEMP									11	-	°F	-	-	0
HIGH REHEAT COIL DISCHARGE AIR TEMP									11	-	°F	-	-	0
LOW REHEAT COIL DISCHARGE AIR TEMP									11	-	°F	-	-	0

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100% CONSTRUCTION DOCUMENTS

FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

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Drawing Title: MECHANICAL CONTROLS POINTS LISTS

Approved: Medical Center Director

Project Title: RENOVATE SURGICAL SERVICE & UPGRADE OPERATING ROOMS

Location: HUNTINGTON, WV

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Office of Construction and Facilities Management

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